CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 77-148

NPDES PERMIT NO. CA0005053

AN ORDER AMENDING ORDER NO. 74-152 TO ADOPT
AMENDED WASTE DISCHARGE REQUIREMENTS FOR:

UNION OIL COMPANY OF CALIFORNIA
SAN FRANCISCO REFINERY
RODEO, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. The Board, on November 19, 1974, adopted Order No. 74-152 prescribing waste discharge requirements for Union Oil Company of California (hereinafter discharger).

2. Since adoption of Order No. 74-152, the Board in April 1975, adopted the Water Quality Control Plan. The Plan includes receiving water limitations for un-ionized ammonia in the receiving water.

3. The refinery discharge includes sewage from plant personnel. The Environmental Protection Agency has modified the definition of secondary treatment to exclude limitations on fecal coliform bacteria.

4. This project involves the continued operation of a privately-owned sewage and industrial waste treatment facility with negligible or no expansion of use beyond that previously existing. Consequently, this project will not have a significant effect on the environment based upon the exemption provided in Section 15101, Title 14, California Administrative Code.

5. The Board has notified the discharger and interested agencies and persons of its intent to prescribe revised requirements.

6. The Board, in a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED that Order No. 74-152 is amended as follows:

A. Effluent limitation A.7 is rescinded.

B. Effluent limitation A.8 of Order No. 74-152 shall hereafter read:

"8. In the discharge from each of the septic tanks tributary to Waste 002, and in the combined flow from those septic tanks, the total coliform bacteria for a median of five consecutive effluent samples shall not exceed 240 per 100 milliliters. Any single sample shall not exceed a most probable number (MPN) of 10,000 total coliform bacteria when verified by a repeat sample taken within 48 hours."

C. Receiving water limitations B.2.d. of Order No. 74-152 shall hereafter read:

d.	Ammonia (as N) (un-ionized)	0.025 mg/l, annual median 0.4 mg/l, maximum at any time

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 20, 1977.

FRED H. DIERKER
Executive Officer

Attachment:
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

Union Oil Company of California

San Francisco Refinery

Rodeo, Contra Costa County

NPDES NO. CA 0005053

ORDER NO. 74-152 & 77-148

CONSISTS OF

PART A August 1977

AND

PART B, Ordered November 19, 1974, effective January 1, 1975
Revised March 28, 1975
Revised September 22, 1975
Revised November 4, 1976
Revised December 20, 1977

Bottom sediment sampling and reporting guidelines, dated 9/4/74 (4 pp)

FOOTNOTES FOR TABLE: 2

(1) Sample collection at stations C-5 through C-9 is required only when waste discharge requirements are violated at stations C-2 through C-4; sample collection at stations C-14 through C-18 is required only when waste discharge requirements are violated at stations C-11 through C-13.

(2) Report incremental and total values.

(3) Sampling shall consist of 3 grab samples taken at intervals of two hours on the day of sampling, and the analytical results shall be averaged.

(4) Report difference of pH between pH at station C-R and pH at each of the other receiving water stations, monthly.

(5) Report 3 sample median survival values for toxicity based on the most recent 3 samples and the 10 sample 90th percentile survival values based on the most recent 10 samples, monthly.

(6) Samples of the sanitary waste, following treatment in septeic tanks and disinfection systems, will be collected at each of the septic tank chlorine contact basins which discharge into the process water system. Samples will be collected in sterile containers, to which dechlorination agent has been added prior to autoclaving. Samples will be collected during a period which corresponds to anticipated high sanitary flows. A small portion of each sample will be tested immediately to assure that all chlorine residual has been removed. Samples will be iced after collection and conveyed to the laboratory following collection of the last individual sample.

In the laboratory, a composite will be prepared from the individual samples, on either an equal volume or flow proportioned basis. The composite will be prepared by transferring an appropriate volume (not less than 50 ml) of each individual sample into a sterial container. The composite will be well mixed, and an aliquot will be taken and analyzed for total coliform. The analytical results from such composite samples shall be considered to be indicative of the bacteriological quality of the aggregate of the individual disinfected sanitary flows at the Union Oil Company's San Francisco Refinery.

(7) Sample effluent and receiving water on the same day.

(8) Report annual median for the previous 12-month period in each monthly report.

(9) Bottom sediment sampling and analysis to be performed in accordance with the "Bottom Sediment Sampling and Reporting Guidelines," dated September 4, 1974.

LEGEND FOR TABLE 2

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
BS = bottom sediment sample
O = observation

FREQUENCY OF SAMPLING

D = once each day
W = once each week
M = once each month
3/W = 3 days per week
2/W = 2 days per week
2/Y = once in March and
once in September
Cont = continuous
2/M = 2 days per month

TYPES OF STATIONS

I = intake and/or water supply stations
E = waste effluent stations
C = receiving water stations
L = basin and/or pond levee stations
B = bottom sediment stations

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INTAKE

Station	Description
I-1	At any point in the water intake from San Pablo Bay, preceding usage for cooling or processing.

B. EFFLUENT

Station	Description
E-001	In the buried pipeline outfall for waste 001 at a manhole about 150 feet inland from the effluent weir.
E-002	In the open outfall channel for waste 002 at a point 5 feet upstream from a weir which, in turn, is about 100 feet upstream from S.P. railroad trestle near bay shore.
E-002-p	In the open outfall channel for the process component of waste 002 at a point about 75 feet from the dissolved air flotation unit outlet. After completion of additional treatment facilities in the spring of 1977, this station will be in the Parshall Flume that will measure the treated process effluent flow rate.
E-002 & S1-22	In the outlet from the chlorine contact basin at each of the discharger's 22 septic tanks as described on Table I (Also map OE 37-58-Y-6) Fig. 1.

C. RECEIVING WATERS (See attached sketch)

Station	Description
C-1	In San Pablo Bay, the area enclosed between shore and an arc drawn through the loci of Stations C-2, C-3, and C-4.
C-2	At a point in San Pablo Bay, located approximately 100 feet southerly of the point of discharge of Waste 002, and approximately 20 feet offshore.
C-3	At a point in San Pablo Bay, located approximately 100 feet directly offshore from the point of discharge of Waste 002.
C-4	At a point in San Pablo Bay, located approximately 100 feet northerly of the point of discharge of Waste 002, and approximately 20 feet offshore.

TABLE 1

SANITARY WASTE SAMPLE STATIONS

SAN FRANCISCO REFINERY, UNION OIL COMPANY

Location Number	Service	Location
S-1	Lab/Admin. Bldgs.	20' SE of east corner of Lab Bldg.
S-2	Inst. Shop/Warehouse	1' NW of wall 10' off SE end of Inst. Shop Bldg.
S-3	Compound	10' north of north wall of Compound Whse.
S-4	Unit 30	30' NW of Tk 689.
S-5	Unit 67	15' south of south door of Control Room.
S-6	West Foremen's Office	15' west of west wall of building.
S-7	Maint. Change Room	35' NW of west corner of Change House
S-8	Tormey Gate	20' SE of SE wall of Gate House
S-9	Refinery Foremen's Office	15' NW of west corner of building.
S-10	Unit 240	25' SW of south corner of Control House.
S-11	Wax Warehouse	15' NW of center of NW wall of Wax Whse.
S-12	Unit 212	20' west of west corner of Control House.
S-13	Unit 200	50' SE of south corner of Control House.
S-14	Unit 215	5' SE of center of SE wall of Control House.
S-15	Unit 220	15' SW of south corner of Control House.
S-16	Unit 80	5' SE of south corner of Control House.
S-17	East Foremen's Office	5' SW of south corner of building.

TABLE 1

SANITARY WASTE SAMPLE STATIONS

SAN FRANCISCO REFINERY, UNION OIL COMPANY

(Continued)

Location Number	Service	Location
S-18	Unit 231	20' north of north corner of Control House.
S-19	Unit 238	15' NW of center of NW wall of Control House.
S-20	Unit 40	10' NW of west corner of Control House.
S-21	Unit 76	10' SE of east corner of Control House.
S-22	Unit 100	10' NW of center of NW wall of Control House.

C. RECEIVING WATERS (continued)

Station	Description
C-5 thru C-9	At points in San Pablo Bay, located on an arc of 300 foot radius from the point of discharge of Waste 002. C-5 is 20 feet offshore and southerly of the radius point, C-6 is on a radial passing midway between C-2 and C-3, C-7 is on a radial passing through C-3, C-8 is on a radial passing midway between C-3 and C-4, and C-9 is 20 feet offshore and northerly of the radius point.
C-11	At a point in San Pablo Bay, located approximately 100 feet southerly of the point of discharge of Waste 001, and approximately 20 feet offshore.
C-12	At a point in San Pablo Bay, located approximately 100 feet directly offshore from the point of discharge of Waste 001.
C-13	At a point in San Pablo Bay, located approximately 100 feet northerly of the point of discharge of Waste 001, and approximately 20 feet offshore.
C-14 thru C-18	At points in San Pablo Bay, located on an arc of 300 foot radius from the point of discharge of Waste 001. C-14 is 20 feet offshore and southerly of the radius point, C-15 is on a radial passing midway between C-11 and C-12, C-16 is on a radial passing through C-12, C-17 is on a radial passing midway between C-12 and C-13, and C-18 is 20 feet offshore and northerly of the radius point.
C-R	At a point in San Pablo Bay, located approximately 400 feet north of the discharger's Tank No. 76.
C-RA	At any point along the shore of San Pablo Bay Near Union Oil's San Francisco Refinery, but not affected by the waste therefrom at the time sampled, to be used when natural conditions cause turbidity near and up current from the discharge points to be higher than at station C-R. This C-RA station shall be used only as a turbidity reference point, and its location shall be shown on a map accompaning each report containing data from C-RA. Indicate direction of alongshore current at C-RA and the outfalls.

D. BOTTOM SEDIMENTS

Station	Description
B-1	At a point in San Pablo Bay, coincident with the locations of Receiving Water Station C-3.
B-2	At a point in San Pablo Bay, coincident with the locations of Receiving Water Station C-6.
B-R	At a point in San Pablo Bay, coincident with the locations of Receiving Water Station C-R.

E. LAND OBSERVATIONS

Station	Description
L-1 thru L-"n"	Located at points along the perimeter levee of the containment pond in which tetra-ethyl lead wastes are disposed, at equidistant intervals not to exceed 15 feet. (A sketch showing the locations of these stations will accompany each report.)

F. MISCELLANEOUS REPORTING

Each month the discharger shall make all appropriate enteries on a copy of Form S (see attached), and a completed Form S shall be included with both the original EPA Form 3320-1 (sent to the Executive Officer) and with the copy of EPA Form 3320-1 (sent to the Regional Administrator, EPA).

II. SCHEDULE OF SAMPLING, MEASUREMENTS AND ANALYSIS

A. The schedule of sampling, measurements and analysis shall be that given at Table 2.

III. MODIFICATION PART "A", DATED 7/74

A. Exclusions: Paragraphs C-5c, C-5d(4), C-5e, and F-3g(2).

B. Modifications:

1. Paragraph C-4a(1)(d): Replace "Metals (depending on industrial output)..." with "Zinc and total chromium.."

2. Paragraph D-1a: Replace "...varying days selected at random." with "...days coincident with effluent composite sampling."

3. Paragraph D-2a: Delete "...on days coincident with influent composite sampling, or ..."

4. Paragraph F-3f(2): Delete "...(and copies... ... of the report.)"

I, Fred H. Dierker, Executive Officer hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Orders Nos. 74-152 and 77-148.

2. Was ordered by the Executive Officer on November 19, 1974, became effective January 1, 1975, was revised effective March 28, 1975, September 22, 1975, and November 4, 1976, and is hereby further revised, effective on the date ordered as shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger. Revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

Attachments to Part B:
Sketch, dated 7/26/74 - Fig. 2
Form S (1 page)
Table I (2 pages)
Table 2

date ordered December 20, 1977

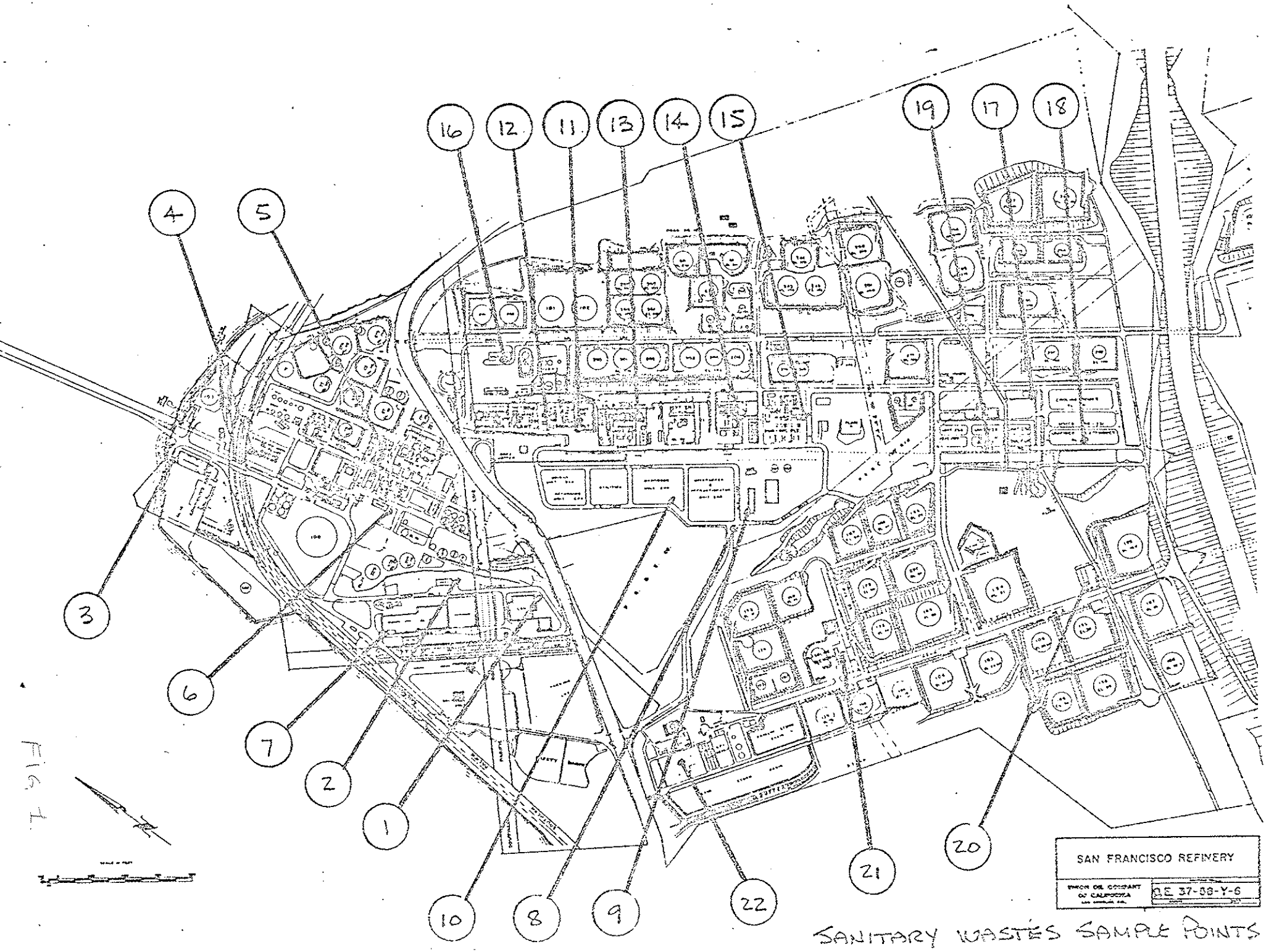

FIG 1

SANITARY WASTES SAMPLE POINTS

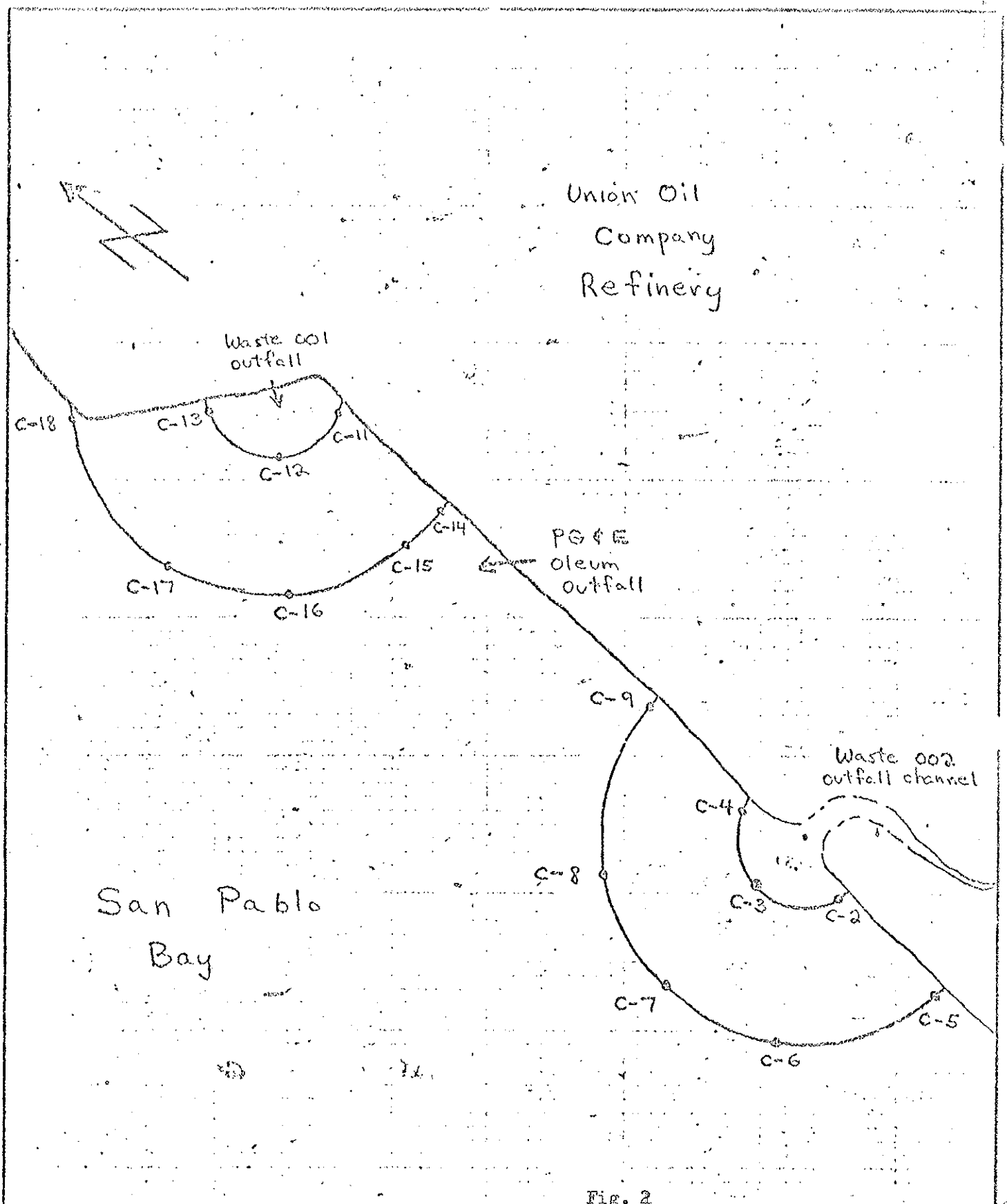

Fig. 2

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

UNION OIL COMPANY
RECEIVING WATER
SAMPLING STATIONS

DRAWN BY: DEB	DATE: 7/25/74	DRWG. NO.

FORM S

STORM RUNOFF ALLOCATION RECORD

MONTH_____ YEAR_____

Year Month Date	Rainfall (Inches)	Storm Runoff Flow (Inches x 7,900,000) (Gallons)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
Total Monthly		
Average Monthly		
Maximum		

		Monthly Average Storm Runoff Flow (expressed in thousand Gals)	Allocation Factor (lbs/100 gals.)	Storm Water Allocation =(lbs/day)	A2 Effluent Limits + (lbs/day)	=	Total Effluent Limit (lbs/day)
(lbs/day)	30-day Average BOD_5		x 0.21	=	+ 1080	=	
	TSS		x 0.14	=	+ 770	=	
	TOC		x 0.64	=	+ 3200	=	
	O & G		x 0.067	=	+ 360	=	
		Monthly Maximum Storm Runoff Flow (expressed in thousand Gals.)	Allocation Factor (lbs/1000 gals.)	Storm Water Allocation (lbs/day)	A2 Effluent Limits + (lbs/day)		Total Effluent Limit =(lbs/day)
	Maximum Daily BOD_5		x 0.40	=	+ 2100	=	
	Limitation TSS		x 0.24	=	+ 1400	=	
(lbs/day)	TOC		x 1.2	=	+ 6500	=	
	O & G		x 0.126	=	+ 680	=	

TABLE 2

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

SAMPLING STATION	I-1	E-001		E-002		E-002-P		S1-22 E-002		C-1	Other C(1)	B(10)	L
TYPE OF SAMPLE	C-24	C-24	G	C-24	G	C-24	G	C-24	G	O	G	BS	O
Flow Rate (mgd)			cont	3/W			cont						
Total Organic Carbon (mg/l & lbs/day)	W	(2) W		(2) W									
Temperature (^{o}F)			cont		cont						M		
BOD, 5-day, 20^{o} C (mg/l & lbs/day)						W							
Settleable Solids (ml/l-hr)							W						
Total Suspended Solids (mg/l & lbs/day)						W							
Oil & Grease (mg/l & lbs/day)					(3) W		W(3)						
Phenols (mg/l & lbs/day)						W							
Ammonia Nitrogen (mg/l & lbs/day)						W							
Total Sulfides (mg/l & lbs/day)							W						
Chromium, Total (mg/l & lbs/day)						M							
Chromium, Hexavalent (mg/l & lbs/day)						M							
Zinc (mg/l & lbs/day)						M							
Chlorine Residual (mg/l)					M								
pH (units)			2/W		cont		2/M				(4) M		
Fish Toxicity, 96-hr. % Survival in undiluted waste				(5) M									
Coliform (Total) (MPN/100 ml)									(6) 2/W				
Turbidity (describe & compare with reference sta. turbidity)			(7) M		(7) M						(7) M		
Dissolved Oxygen (mg/l and % Saturation)											(8) M		
Dissolved Sulfides (mg/l) (if DO < 5.0 mg/l)											M		
Non-dissociated ammonium hydroxide (mg/l as N)											M		
Bottom Sediment Analyses and Observations												2/Y	
All Applicable Standard Observations			D		D					M	M		M